J. R. BOOTH'S LOGGING RAILWAY.

To our readers the name of Mr. J. R. Booth, the great millionaire lumberman and railroad magnate, is quite familiar, but the system he uses in transporting logs from his timber limits to Ottawa will perhaps present some interesting and novel features.

There is no waterway between Lake Nipissing and the Ottawa river, or its tributaries, but back of Lake Nipissing is a small lake called Lake Nosbonsing, with an outlet by two small rivers and a lake into the Mattawa river, which empties into the Ottawa. The desired object, therefore, was to convey the logs from Lake Nipissing overland to Lake Nosbonsing, at the greatest speed and lowest possible cost, and twelve years ago Mr. Booth built a railroad connecting the two lakes for this purpose. The terminus at Lake Nipissing is Wisawasa, where the creek of the same name empties into the lake, but the bank is very steep, being 65 feet above the level of the lake. This creek was harnessed to draw the logs up to the top and load them onto the cars. A building was built into which the logs were carried to be loaded. The building is 220 feet long by 45 feet wide. The rear end is on a level with the ground, and the front end, supported by heavy framework, is 65 feet above the level of the lake. A jack ladder, 150 feet long, conveys the logs to the building by an endless chain, which is operated by a rope drive 500 feet long. A raised platform extends the full length of the building, and in the platform, or table, is an endless chain operated by another rope drive, 1,150 feet long. These rope drives derive their power from a water wheel 44 inches in diameter, under a heavy head of water passing down a flume 6 × 8 feet. The water wheel, by means of a friction clutch, drives a fire pump when required, by which the railroad engine is supplied with water. An annex, 30 × 50 feet, covers the wheel and pump. The shafting is 3⅞ inches in diameter, and on this shaft are two grooved wheels around which the ropes rotate.

Alongside of the platform are shunted four flat cars, with two birch stakes in each, against which the logs run from the table. Each car is 18 feet long, and is built of red oak lumber on tamarack bunks. As the jack ladder chain dumps eight logs per minute on the platform, the chain carries them along and they are dumped or slid onto the skids and then onto the cars. Seventeen men are required to do the loading.

When a car is loaded a fork chain attached at one side binds the load on, being tightened by a rachet wheel and dog. In the handling of the logs a great deal of bark is knocked off, which drops through the floor into a shute, and is carried down into the lake.

The road is five miles in length, with two miles of sidings and switches; one switch extending to the Grand Trunk railway. Twenty-two cars are taken each trip. Upon the return of the twenty-two empty cars, they are left on a siding. The engine then pulls out eleven cars already loaded to another siding, and eleven of the empty cars are run into the building, where they are quickly loaded. The engine then picks these up and with the other eleven the load is completed. At the terminus the track slightly declines towards the lake, the chains are let go and the logs glide off into the water. Two men are employed here to break up jambs. Here the screw tug "Nosbonsing" tows the logs down to the Mattawa river, from whence they float down to Ottawa.

The rolling stock consists of 35 flat cars, which carry an average load of 19 logs. Thirty-three of these cars are in constant use, two being kept in reserve. They are 18 feet long by 10 feet wide, and are mounted on standard wheels and axles. The locomotive engine has been in use twelve years, and was built by the Rhode Island Locomotive Works. A competent engineer and fireman are in charge, and four brakesmen are employed on the train. The road is level and everything runs smoothly. Four section men keep the road in good repair. The round trip has been made in one hour. It requires but two and a half minutes to dump the 22 car loads into Lake Nosbonsing. Ten trips a day are made, thus carrying over 4,000 logs.

The large steamer "Booth," of 100 tons, gathers up the logs around the shores, and a smaller tug does the booming, etc. There are two wharves at Wisawasa, and two men are constantly employed cutting up the flood wood which collects in the booms, for fuel for the boats. Six men feed the jack ladder chain.

Mr. Thomas Darling, the manager at Wisawasa, is a trustworthy man, and has been in Mr. Booth's employ for many years.

BRITISH COLUMBIA MILLS.

BELOW will be found descriptions of several saw-mill and wood-working establishments in British Columbia which were unavoidably crowded out of our November issue :—

BURRARD INLET RED CEDAR LUMBER COMPANY.

The mills of the Burrard Inlet Red Cedar Lumber Company are situated at Port Moody, B. C., near the head of Burrard Inlet and on the main line of the Canadian Pacific railway. The trade of the company is principally confined to the manufacture of high grade red cedar and spruce lumber, and all grades of cedar shingles. The capacity of the mill is about 50 thousand feet of lumber and 150 thousand shingles per day of ten hours.

The plant is operated by a 300 h. p. double engine, and the machinery throughout is of the latest improved designs, eminently suitable for the economical manufacturing of bevel and drop siding, ceiling, mouldings and finishing lumber of every description. In the shingle department the latest improved machines are placed in position to use all inferior timber from the saw mill. Rough cants after leaving the double circulars are cut into shingle blocks by an automatic cut-off machine, thus relieving the yard from an accumulation of inferior and unsaleable lumber.

The dry-kilns have a capacity of 150 thousand shingles and 15 thousand feet of lumber per day, and are operated by a 9 ft. fan driven by a 14 h. p. horizontal engine. The mill, kilns and sheds are protected from fire by a water system owned by the company, having a pressure of 40 lbs. per square inch, with hydrants conveniently placed in the yard and mill, and Ball nozzle sprinklers on exposed roofs.

The timber limits, within sight of the mill, on the opposite side of the inlet, are admitted to be the best in the province, and it is estimated by competent judges that the supply of timber is ample for thirty years. There is a large quantity of thoroughly air-dried lumber on hand at present, and with the stock now being cut the orders accepted will be filled promptly. The company is now being re-organized, and when this is accomplished it is proposed to add a first-class sash and door plant to the present equipment.

VANCOUVER SASH & DOOR COMPANY, VANCOUVER.

Though this business was only established two years ago, it has met with such success as to *cause several additions to be made to the plant.* As the buildings now stand, they cover a large area, the main factory being 120 × 60 feet and two stories high. The office and warehouse is 80 × 40 feet, and is also two stories high.

A perfectly appointed mill throughout is fitted with the latest improved wood-working machinery and tools, and the equipment of this establishment is not surpassed by any in the province. A force of thirty skilled hands and twenty laborers are constantly employed. From one-and-a-half to one-and-three-quarter million feet of lumber are used annually. The range of productions embraces the manufacture of sashes, doors, blinds, mouldings, newels, brackets, scroll and band-sawing, and interior finishings of all descriptions, as well as planing surfacing, ripping, lathing, etc. The best seasoned lumber only is used.

The promptitude with which this company fills orders can be accounted for by the superiority of its plant. Though the business of the firm in this province is extensive, its manufactures of doors, etc., are largely shipped to Australia.

The president of the company is Mr. J. B. McLaren, of the McLaren-Ross Mills, New Westminster. Mr. H. DePencier, manager of the McLaren-Ross mills, is secretary and treasurer, while Mr. R. D. Featherstone is manager.

VICTORIA PLANING MILLS, VICTORIA.

Messrs. Muirhead & Mann are the proprietors of this, the largest and oldest industrial establishment in Victoria, located on Constance street. This enterprise was inaugurated in 1870, and has enjoyed a steady growth from the out-set. The plant covers a large area, and is of the most modern and perfect description. The planing mill is a substantial three-story building of 125 × 125 feet in dimensions. The first floor contains all the necessary machinery for the finishing of lumber, such as sashes, doors, staves, mouldings, mantels and other products of lumber. The second floor is reserved for bench work. The plant is operated by two powerful engines, so arranged that, in case of accident to one, the other can be utilized, thus preventing the possibility of delay.

The firm own three large store-houses in which their output is stored, as well as their importations of glass, which commodity the firm imports direct in large quantities from England and Belgium.

On an average, 250,000 feet of lumber is consumed per month. At present forty workmen are employed, but in busy times one hundred and over have frequently been at work. A specialty is made of ship-joiners' work, the firm having supplied materials for many of the largest vessels frequenting these waters. Anyone visiting the Court House at Nanaimo, the new Parliament buildings at Victoria, and other public buildings and residences whose interiors have been finished by this firm, will easily see that their output is of a superior character.

GEORGE CASSADY & CO., LIMITED, VANCOUVER.

This company are proprietors of two establishments, which were amalgamated on the 1st of January, 1895, under the above name. They were originally known as George Cassady & Co., founded eight years ago, and Leamy & Kyle, founded nine years ago. George Cassady is *secretary and manager. They are manufacturers* of rough and dressed lumber, doors, sashes, mouldings, shingles, laths, turning work, etc.

The property is situated on False Creek. At the foot of Cambie street are the door and sash factory, finishing shops, sheds and offices; while on the south side of False Creek is where the saw mill is located. The machinery in all of the above is of the most modern description. While enjoying a large local trade, the firm also make considerable shipments into the interior and as far east as Ontario. The quality of their shingles is well known and in this department their export trade is very large. The machinery is mostly furnished by the Goldie & McCulloch Co., Ltd., of Galt, Ont. Mr. Cassady came from New Brunswick eight years ago.